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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,215

09/22/2006

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EXAMINER

COPPINS, JANET L

ART UNIT

PAPER NUMBER

1626

MAIL DATE

DELIVERY MODE

01/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,215

Applicant(s)

HUDACK ET AL.

Examiner

Janet L. Coppins

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-14 are pending in the instant application.

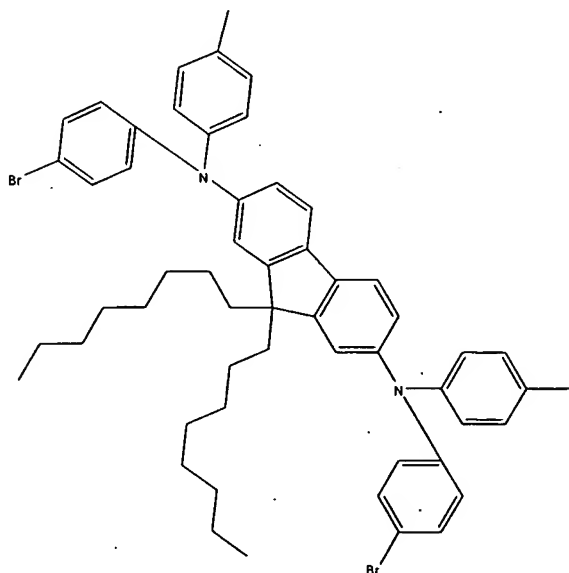
Information Disclosure Statement

2. Applicants' Information Disclosure Statements, filed May 12, 2006 and August 22, 2006, have been considered by the Examiner. Please refer to the signed copies of Applicant's PTO-1449 forms submitted herewith.

Election/Restrictions

3. In the Lack of Unity of September 28, 2007, Examiner Lambkin required that Applicants elect a single compound to which the claims must be restricted, in accordance with 37 CFR 1.499.

In the response of November 15, 2007, a provisional election was made to prosecute the compound:



2,7-bis(4-methyl-4'-bromo-diphenylamino)-9,9-dioctylfluorene, which is Example 2 on page 12 of the Specification, and falls under the formula of claim 1. Because applicant did not distinctly

and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without** traverse (MPEP § 818.03(a)).

Applicants allege that claims 1-14 are readable on the elected compound, however the Examiner would like to point out that only claims 1-11 are readable on the elected compound, while claims 12-14 are not dependent (they include other limitations outside of the formula of claim 1).

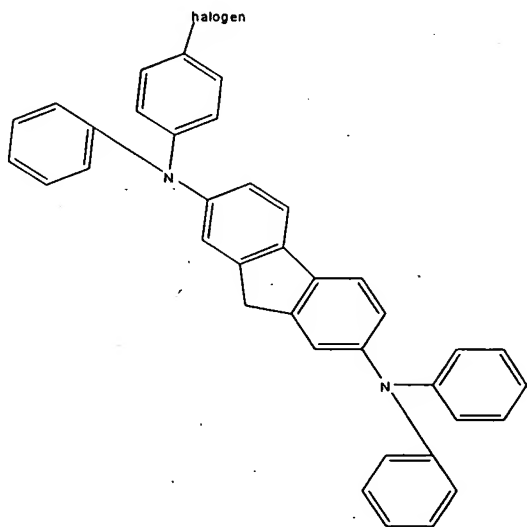
Accordingly, claims 12-14 are currently withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

As stated previously, upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Status of the Claims

4. Claims 1-14 are pending in the instant application. Claims 12-14, as previously stated, are withdrawn from further consideration by the Examiner as being drawn to non-elected inventions. The withdrawn subject matter is patentably distinct from the elected subject matter as it differs in structure and element and would require separate search considerations. In addition, a reference, which anticipates one group, would not render obvious the other.

The scope of the invention of the elected subject matter is as follows:



Compounds of the formula depicted in claim 1, wherein Z is fluorine and the remaining variables are as defined.

As a result of the election identified above, the remaining subject matter of claims 1-11 (i.e. compounds wherein "Z" is not fluorene) are withdrawn from further consideration pursuant to 37 CFR 1.142(b). The withdrawn compounds contain varying functional groups which are chemically recognized to differ in structure and function. This recognized chemical diversity of the functional groups can be seen by the various classification of these functional groups in the U.S. and international classification systems. Therefore the subject matter which are withdrawn from consideration as being non-elected subject matter differ materially in structure and composition and have been restricted properly and a reference that anticipates the elected

compound(s) would not even render obvious the withdrawn subject matter and the fields of search are not co-extensive.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 10 recites a composition comprising a polymer of claim 5 "...and a solvent for the polymer" but it is unclear which solvents Applicants are intending to claim. Applicants may require a certain physiologically acceptable solvent but one skilled in the art cannot determine this from the claim language. The Examiner recommends describing the type of solvent required, or listing several of the solvents that are discussed on page 10 of the specification.

(b) Claim 11 recites a composition comprising a polymer of claim 5 "...and another polymer." It is unclear from the claim itself what is meant by "another polymer," and the Examiner cautions that Applicants are not enabled for *all* other polymers. The Examiner

recommends the following language, "...and another polymer selected from the group consisting of homo- or co-polymers (including terpolymers or higher) of polyacrylates, polymethacrylates, polystyrenes, polyesters, polyimides, polyvinylenes, polycarbonates, polyvinyl ethers and esters, fluoropolymers, polycarbazoles, polyarylene vinylenes, polyarylenes, polythiophenes, polyfurans, polypyrroles, polypyridines, and polyfluorenes" (copied from the Specification, page 9, lines 16-22.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. (a) Claims 1,2 and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Senoo et al, EP 953624 A1. Senoo et al teach triarylamine compounds and their compositions that are the same as the instantly claimed compounds according to the formula of claim 1, please refer to EP document, pages 4 and 5, formula (I) or (II), wherein "Ar1-Ar4" are optionally substituted aryl, or "Ar5-Ar8" are optionally substituted aryl. The aryl groups in either formula can be further substituted by halogen (chlorine) or phenyl groups. Please refer in the table on page 25, Compound No. 88 for example, and specifically RN 248584-71-6.

(b) Claims 1, 2, and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Nakata et al, U.S. Pat. No. 5,932,383. Nakata et al teach fluorene compounds and their compositions that are diarylamino substituted, wherein two of the aryl groups are halo-

substituted and the other two aryl groups are phenyl substituted, and are the same as the instantly claimed compounds, please see columns 25 and 26, formula (1)-51. Please refer to RN 203513-59-1, for example.

(c) Claims 5 and 10 rejected under 35 U.S.C. 102(a) as being anticipated by Nakajima et al, JP 2003-316044, published in Japan November 6, 2003. Nakajima et al teach a polymer and its composition that is the same as the instantly claimed polymer of the formula of claim 5, please refer to the abstract of the JP document, wherein a polymer comprised of a fluorene core structure with bisdiarylamino substituents is taught. Please refer to RN 622852-15-7, for example.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 3 and 4 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-025473, to Takuma, Hirotsuke, please refer to the translation provided of the JP abstract.

Applicants are claiming the following compounds:

Applicants are claiming fluorene-based monomers according to the formula of claim 1, that are useful for electroluminescent devices, for example.

Determining the scope and content of the prior art

Takuma teaches fluorenyl-diphenylamine monomers having the same core structure, please refer to compounds according to formula (I) of page 4 of the translation. The compounds disclosed in the JP patent abstract fully encompass the compounds of the instant invention and are also useful for organic electroluminescent devices.

Ascertaining the difference between the prior art and the claims

The difference between the prior art and the claims is that the JP document does not teach a single disclosed compound or species that anticipates the monomer of claims 3 or 4.

Resolving the level of ordinary skill in the pertinent art

However, minus a showing of unobvious results, it would have been obvious to one of skill in the art to prepare the fluorene-diamine-bis(4-bromophenyl)-bis(substituted-phenyl) compounds as instantly claimed since the prior art reference discloses a similar genus of

fluorenyldiphenylamine monomers with the same activity of electroluminescence. The JP document teaches a larger genus of compounds that completely encompass the smaller genus that is instantly claimed in claims 3 and 4. One would be motivated to prepare the instantly claimed invention since Takuma has enabled and taught the broad scope of compounds in the many examples and formulae disclosed in the JP document, for example compounds of Formula 7. Furthermore, the only difference between the compounds of instant claims 3 and 4 and compound (8) of the JP document is the presence of chlorine instead of bromine on the 4-position of the phenyl rings. In *Ex parte Wiseman*, 98 USPQ 277 (1953), it was held that halogens are equivalent substitutions, (the compounds were rejected over prior art because the difference between the claimed compounds and the prior art was two fluorine atoms versus two chlorine atoms). The basis of this reasoning is that fluorine and chlorine are both halogen elements from the seventh group of the periodic system and the claimed compound is thus an analogue or an isologue of that disclosed in the prior art. The compounds are expected to possess similar properties differing only in degree.

Therefore, one skilled in the art would know to pick and choose from the various substituents disclosed and the same core fluorenyldiphenylamine structure, as guided by Takuma in Formula 7, compound (8), particularly when they possess the same activity and share the same utility. Therefore, absent a showing of unobvious and superior properties, the instant claimed monomers of claims 3 and 4 would have been suggested to one skilled in the art.

Claim Objections

13. Claims 6-9 are objected to as being depending on rejected base claims.

Conclusion

14. In conclusion, claims 1-14 are pending in the instant application. Claims 12-14 are currently withdrawn from consideration. Claims 1-5, 10 and 11 are currently rejected, and claims 6-9 are objected to.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Coppins whose telephone number is 571.272.0680. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571.272.0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

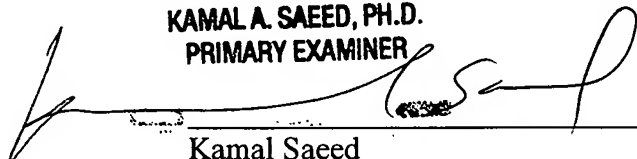
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Janet L. Coppins
January 2, 2008

KAMAL A. SAEED, PH.D.
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'K. Saeed', is written over a horizontal line.

Kamal Saeed
Primary Examiner, Art Unit 1626